UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,168	10/05/2000	Rajeev Shorey	JP920000260US1	8095

7590	01/11/2005

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EXAMINER
RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Examiner maintains the objection to the specification since the acronym HOL is not located in the list of references on pages 22-24 of the specification.

2.   Examiner again requests a list of references in an IDS since a listing of references in the specification is not a proper information disclosure statement.

3.   Applicant's arguments filed 10/20/2004 have been fully considered but they are not persuasive. On pages 9-10 of the Response, Applicant argues that Johansson "fails to disclose, teach or suggest the features of [the] independent claim[s] ... <u>including each baseband packet being of a size corresponding to one of a permitted set of capacities '$C_1, C_2, ... C_n$'</u>." Examiner, respectfully, disagrees.

4.   Johansson teaches that Bluetooth packets may occupy 1, 3, or 5 time slots (col. 2, lines 36-38). Johansson also teaches that the devices control packet sizes in order to achieve precise control of bandwidth and delay (col. 2, line 64-col. 3, line 2). Finally, Johansson teaches adapting packet size in response to error rates to achieve a better throughput (col. 8, lines 15-18). Thus, Examiner asserts that Johansson teaches that each baseband packet is of a size corresponding to one of a permitted set of capacities "$C_1, C_2, ... C_n$."

5.   On page 11 of the Response, Applicant argues that Johansson does not disclose minimizing the number of baseband packets created for each Link layer packet including converting the Link layer packet into as many baseband packets of highest capacity as possible and repeating the conversion process on unconverted bytes using each successive lower capacity

baseband packet size until all unconverted bytes have been converted into baseband packets.

Again, Examiner, respectfully, disagrees.

6.   Johansson teaches breaking each link layer packet into variable size baseband packets,

i.e. packets that occupy 1, 3, or 5 slots, and repeating the conversion process on the unconverted

bytes until all the unconverted bytes have been converted into baseband packets (col. 2, lines 36-

38; col. 2, line 64-col. 3, line 2; and col. 8, lines 15-18). Johansson also discloses controlling

bandwidth utilization by controlling the baseband packet size (col. 2, line 64-col. 3, line 2).

Johansson further discloses that "tradeoffs between packet size and packet overhead along with

other link requirements may need to be considered to find optimal utilization and throughput"

(col. 4, lines 23-33). Thus, it would have been obvious to one of ordinary skill in the art at the

time of the invention to minimize the number of baseband packets created for each Link layer

packet is an SAR-OSU algorithm by converting said link layer packet into as many baseband

packets of highest capacity 'Cn' as possible and repeating the conversion process on the

unconverted bytes using each successive lower capacity baseband packet size until all the

unconverted bytes have been converted into baseband packets in order to achieve high

bandwidth utilization by minimizing the overhead for the system. Thus, Examiner maintains that

Johansson teaches the aforementioned limitation.

7.   For the above reasons, Examiner maintains the rejections of claims 1-15.

Information Disclosure Statement

8.   The listing of references in the specification is not a proper information disclosure

statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information

submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be

incorporated into the specification but must be submitted in a separate paper." Therefore, unless

the references have been cited by the examiner on form PTO-892, they have not been considered

(see page 22, line 20-page 24, line 10).

Specification

9.   The disclosure is objected to because of the following informalities: on page 3, line 25

the acronym HOL should be defined before it is used in the specification. Appropriate correction

is required.

Claim Rejections - 35 USC § 102

10.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11.   Claims 1, 5, 6, 10, 11, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by

Johansson et al (USPN 6,480,505).

12.   Regarding claims 1, 6, and 11, Johansson discloses a computer implemented method and

system for transferring data over a master driven TDD/TDMA based wireless network (col. 2,

lines 18-48) characterized in that it operates with minimum delay in end-to-end transmission by

including the steps of and means for: achieving optimum time slot utilization by minimizing the

number of baseband packets created for each Link layer packet, each baseband packet being of a

size corresponding to one of a permitted set of capacities `C1, C2, ...Cn' (col. 2, lines 36-38;

col. 2, line 64-col. 3, line 2; and col. 8, lines 15-18), and maintaining optimum sharing of

bandwidth, higher link utilization and low baseband packet transmission queue occupancy by

adaptive scheduling of the transmission of said baseband packets in said queues (col. 7, lines 14-

53 and col. 8, lines 19-53).

13.   Regarding claims 5, 10, and 15, referring to claims 1, 6, and 11, Johansson discloses

increasing the transmission polling interval for a baseband packet transmission queue with low

packet traffic when a poll packet (null packet) is sent instead of a data packet (col. 6, lines 26-39;

col. 7, lines 40-53; and col. 9, lines 24-37).

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

15.   Claims 2, 4, 7, 9, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Johansson et al (USPN 6,480,505).

16.   Regarding claims 2, 7, and 12, referring to claims 1, 6, and 11, Johansson does not

expressly disclose that minimizing the number of baseband packets created for each Link layer

packet is an SAR-OSU algorithm comprising converting said link layer packet into as many

baseband packets of highest capacity `Cn' as possible and repeating the conversion process on

the unconverted bytes using each successive lower capacity baseband packet size until all the

unconverted bytes have been converted into baseband packets; however, Johansson does disclose

that that each link layer packet is broken into variable size baseband packets and repeating the

conversion process on the unconverted bytes until all the unconverted bytes have been converted

into baseband packets (col. 2, lines 36-38; col. 2, line 64-col. 3, line 2; and col. 8, lines 15-18).

Johansson also discloses controlling bandwidth utilization by controlling the baseband packet

size (col. 2, line 64-col. 3, line 2). Johansson further discloses that "tradeoffs between packet size

and packet overhead along with other link requirements may need to be considered to find

optimal utilization and throughput" (col. 4, lines 23-33). Thus, it would have been obvious to one

of ordinary skill in the art at the time of the invention to minimize the number of baseband

packets created for each Link layer packet is an SAR-OSU algorithm by converting said link

layer packet into as many baseband packets of highest capacity `Cn' as possible and repeating the

conversion process on the unconverted bytes using each successive lower capacity baseband

packet size until all the unconverted bytes have been converted into baseband packets in order to

achieve high bandwidth utilization by minimizing the overhead for the system.

17.   Regarding claims 4, 9, and 14, referring to claims 1, 6, and 11, Johansson does not

expressly disclose that adaptive scheduling of transmission is an `AFP' algorithm whereby a

baseband packet transmission queue with a size greater than a defined threshold is continuously

polled for a defined number of transmissions as long as its size remains greater than said defined

threshold; however, Johansson does disclose that the adaptive scheduling checks to see if a

transmission parameter is greater than a threshold in order to allow certain nodes to have

additional polling time (additional bandwidth) (col. 6, lines 6-25 and col. 10, lines 1-25).

Johansson also discloses that delay in the system should be compensated for to ensure that

devices are within the requires time limits (col. 4, line 64-col. 5, line 4). Thus, it would have

been obvious to one of ordinary skill in the art at the time of the invention to have the adaptive

scheduling of transmission be an `AFP' algorithm whereby a baseband packet transmission

queue with a size greater than a defined threshold is continuously polled for a defined number of

transmissions as long as its size remains greater than said defined threshold in order to ensure

that nodes with strict delay requirements that will not meet the delay requirements are given

additional bandwidth so that the delay requirements can be met.

18.   Claims 3, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Johansson et al (USPN 6,480,505) as applied to claims 1, 6, and 11 above, and further in view of

Applicant's admitted prior art.

19.   Regarding claims 3, 8, and 13, referring to claims 1, 6, and 11, Johansson discloses that

master driven TDD/TDMA based wireless network is a Bluetooth network (col. 2, lines 18-48).

Johansson does not expressly disclose that link layer packet is L2CAP packet. Applicant admits

as prior art that L2CAP are well known packets in the Bluetooth specification. Thus, it would

have been obvious to one of ordinary skill in the art at the time of the invention to have the link

layer packets be L2CAP packets since L2CAP packets are well known in the Bluetooth

specification.

Conclusion

20.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The

examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman

DJr2   Examiner

Art Unit 2665
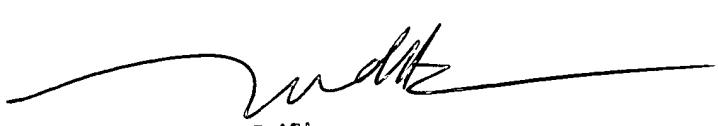
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